



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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January 24, 2006

Ms. Linda Holst
USEPA Region 5
WQ-16J
77 West Jackson Blvd.
Metcalf Federal Building
Chicago, IL 60604

RE: ExxonMobil Oil Refinery, Joliet, Site-Specific Water Quality Standard
NPDES Permit No. IL0002861

Dear Ms. Holst:

The subject facility (ExxonMobil) has presented Illinois EPA with a draft petition regarding relief from total dissolved solids standards for the Des Plaines River in both the Secondary Contact and Indigenous Aquatic Life Use and General Use designated use categories. The purpose of this letter is to inform you of the position of Illinois EPA in this matter and to obtain an indication of whether this change in water quality standards is approvable by Region 5 under the Clean Water Act.

The impending site-specific rule-making is necessitated by a change in plant operations. A consent decree between ExxonMobil and USEPA has been signed that requires the company to reduce air emissions. A Wet Gas Scrubber must be constructed at the Joliet refinery. This device will result in an increase of sodium sulfate in the effluent. No sulfate standard currently exists for Secondary Contact Use waters and the 500 mg/L sulfate standard applicable to General Use waters will be met outside a mixing zone. However, the total dissolved solids (TDS) standard of 1,500 mg/L for Secondary Contact waters and 1,000 mg/L for General Use waters cannot be met through use of a mixing zone because the standards are already periodically exceeded. The reason for this is believed to be road salting in the Chicago area. Violations of the TDS standards occur during the winter season. The Illinois mixing zone standard of 35 IAC 302.102(b)(9) prohibits mixing zones where water quality standards are already exceeded.

The Illinois EPA has concluded that ExxonMobil and the water body segment meet the requirements set forth in Section 27(a) of the Illinois Environmental Protection Act for for a site-specific water quality standard for TDS. See 415 ILCS 5/27(a) (2004). Thus, the Agency plans to support a site specific water quality standard for TDS in this case. ExxonMobil is committed to employing a sulfur recovery system that will capture some of the sulfur that would have gone to the wastewater, thereby reducing sulfate (and therefore TDS) as much as possible. All other treatment options are energy intensive. Here as in past cases, Illinois EPA concludes that no alternative exists but to discharge the TDS to waters of the state.

ExxonMobil has conducted mixing studies, which along with estimations of effluent quality once the new scrubber is operational, allow a prediction of river TDS concentrations. Under conditions of low river flow and high upstream TDS due to road salting, the addition of the proposed higher TDS ExxonMobil effluent will potentially cause the concentration in the river to reach 1,686 mg/L. The highest existing value for the river is 1,595 mg/L, which is predicted to increase by 91 mg/L when the new effluent completely mixes with the river. Under these worst case conditions, the river concentration is not expected to return to the 1,000 mg/L water quality standard until the Des Plaines River receives dilution from other streams. Hence, ExxonMobil will request that the Illinois Pollution Control Board (IPCB) adjust the TDS standard to 1,686 mg/L for the Des Plaines River from their discharge just upstream of the I 55 interstate bridge to the confluence of the Kankakee River. Reviewing the segment of the lower DesPlaines River that is the subject of the Petition for a site-specific water quality standard for TDS, the Agency notes that there are currently no other dischargers in that segment would be expected to desire to take advantage of a site-specific TDS standard—none have an effluent that is anything like what ExxonMobil is proposing to discharge, none are considered a “major” discharger, and none have been under review for needed water quality based effluent limits, either past or present.

No other water quality standards including chloride will be exceeded as a result of the changes at ExxonMobil. The proposed site-specific water quality standard will only be in force during the months when road salt contributes to stream TDS, November through April. During the remainder of the year, mixing alone will allow the general standards to be met. As you are aware, Illinois EPA is endeavoring to delete the existing TDS standard from IPCB regulations. Given that existing chloride and sulfate standards will be met, the TDS standard is not in of itself a good indicator of water quality. Aquatic life toxicity data verify that under the conditions predicted below the discharge, no adverse impact is anticipated. Since the consent decree involves a date certain for operation of the air scrubber, the site-specific water quality standard must be sought immediately.

In conclusion, Illinois EPA supports the draft site-specific water quality standard proposed by ExxonMobil. We would like to proceed before the Board as soon as possible. Tentative approval from Region 5 is requested. We are expecting a final draft of the petition from ExxonMobil very soon and we will forward it to you as soon as it becomes available. Scott Twait can answer any questions you may have at the letterhead phone number.

Sincerely,



Robert Mosher, Manager
Water Quality Standards Section
Bureau of Water